REMARKS/ARGUMENTS

The Office Action mailed June 17, 2002 has been reviewed and carefully considered. Claims 14-16 are canceled. Claims 1, 3, 4, 7, 8, 9, and 17 have been amended. Claims 19 and 20 are added. Claims 4, 5, 6, and 9 are currently withdrawn from consideration as being drawn to non-elected species. Claims 1-3, 7-8, 10-13, and 17-20 are pending in this application, with claims 1 and 17 being the only independent claims. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

In the Office Action mailed June 17, 2002, the drawings are objected to as containing informalities listed by the Examiner in sections 2-6 of the Office Action. The drawings and the specification have been amended to address each of the points raised by the Examiner in the Office Action. In view of the amendments to the claims and specification, it is respectfully requested that the objections to the drawings now be withdrawn.

Claims 1-3, 7-8, 12-13 and 17-18 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 4,685,404 (Sheppard).

Claims 10-11 stand rejected under 35 U.S.C. §103 as unpatentable over Sheppard in view of U.S. Patent No. 4,129,422 (Wood).

Claims 1-3, 7-8, 12-13, and 17-18 stand rejected under 35 U.S.C. §103 as unpatentable over DE 35 23 610 (Gudymov) in view of U.S. Patent No. 1,921,806 (Carlson).

Before discussing the cited prior art and the Examiner's rejections of the claims in view of that art, a brief summary of the present invention is appropriate. The present invention relates to a gasification reactor vessel with a cooling system for cooling the reactor vessel. The gasification reactor vessel includes a cylindrical pressure shell 4, wherein an elongated encircling body wall of the shell has an inner side 28 (see page 10, lines 6-8 of the specification). Channel

members 30 are welded to the inner side 28, wherein cooling channels or conduits 5 are defined by the cooling channels 30 and the inner side of the shell (page 10, lines 8-16; and page 11, lines 2-3). A refractory protective layer 6 is arranged between the reaction chamber 1 and the conduits 5 (page 11, lines 11-14). As taught by the present invention, the pressure of the cooling channels is maintained at a higher level than the pressure in the reactor chamber to prevent gasification gas from entering the cooling system (page 11, lines 5-7). Furthermore, the relatively small dimensions of the cooling channels 5 allow their pressure to be maintained even when the reaction chamber 1 is depressurized to atmospheric pressure. Likewise, in the event of fluctuations in the pressure in the reaction chamber 1, the pressure in the cooling channels 5 can remain constant, provided the condition that it always be higher than the pressure in the reaction chamber 1 is satisfied (see page 11, lines 7-11). Accordingly, pressure in the cooling system according to the present invention does not have to be constantly adapted to the pressure in the reaction chamber.

Independent claims 1 and 17 have each been amended to clarify that the cooling conduits are defined by the channel members and the inner side of the shell. The dependent claims are amended to be consistent with the changes to independent claim 1 and 17.

Sheppard discloses a slagging combustion system having a pre-combustion section 12 and a primary combustion chamber 14. According to Sheppard, cooling of the pre-combustion section and the primary combustion chamber, may be effected by a system as disclosed in Figs. 5 and 6, which is described at col. 16, line 64 to col. 17, line 14. According to Sheppard, a tube-and-membrane construction is used for retaining the refractory and/or slag layer. This construction is best illustrated in Fig. 6 of Sheppard. Each of the cooling conduits is defined by a tube made up of surfaces 88 and 90. Although Sheppard describes two surfaces,

Sheppard specifically discloses at col. 16, lines 66-68 that surfaces 88, 90 are the interior and exterior surfaces of a cylindrical metal tube. Sheppard further discloses that the tubes are connected to each other by a membrane 102. Instead of disclosing an encircling shell with channel members arranged on an inner side of the shell, Sheppard discloses a plurality of tubes interconnected by membranes 102. Accordingly, Sheppard fails to disclose a vessel having a pressure shell and "a plurality of channel members defining cooling conduits, each of said channel members extending lengthwise between said shell ends and being distributed circularly around an inner side of said body wall, said channel members being fixedly connected to said inner side, interior spaces of said cooling conduits being in communication with said channel members and said body wall inner side", as expressly recited in independent claims 1 and 17. Accordingly, it is respectfully submitted that independent claims 1 and 17 are not anticipated by Sheppard.

Gudymov discloses a reactor vessel having an inner shell and an outer shell. The annular space between the two shells conducts a cooling fluid from an inlet and outlet 11, 13 (see Fig. 1). Pins connect the inner shell to the outer shell to facilitate heat transfer. However Gudymov fails to teach or suggest the channel members as expressly recited in independent claims 1 and 17.

Carlson discloses a heat exchanger apparatus in which channels are formed by U-shaped strips 4 connected along an outer side of an inner shell 5. The purpose of the Carlson device is to sterilize equipment inside a container. Accordingly, the heat is being transferred from the conduits to the interior of the container (see page 1, lines 65-74). The Examiner states that it would have been obvious to replace the cooling conduit of Gudymov with a plurality of conduits as taught by Carlson. However, a direct substitution is not possible because of the

differences in the two devices. Moreover, both Gudymov and Carlson show a cooling conduit or duct against an inner shell. Independent claims 1 and 17 recite that the conduits are defined by a channel member connected to the inner side of an outer shell with a refractory lining between the conduits and the vessel interior. Since the vessel construction taught by Gudymov and Carlson fails to disclose "a plurality of channel members defining cooling conduits, each of said channel members extending lengthwise between said shell ends and being distributed circularly around an inner side of said body wall, said channel members being fixedly connected to said inner side, interior spaces of said cooling conduits being in communication with said channel members and said body wall inner side", as expressly recited in independent claims 1 and 17, it is respectfully submitted that independent claims 1 and 17 are allowable over Gudymov in view of Carlson.

Dependent claims 2-3, 7-8, 10-13, 18-20, each being dependent on one of independent claims 1 and 17, are deemed allowable for the same reasons expressed above with respect to independent claims 1 and 17.

New claims 19 and 20 read on the elected species of Fig. 4. Support for these claims is on page 11, lines 5-9.

Upon allowance of a generic claim, applicants respectfully request consideration of withdrawn claims 4-6 and 9. Both independent claims 1 and 17 are currently generic claims which read on both species in Figs. 3 and 4.

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

It is believed that no additional fees or charges are required at this time in connection with the present application; however, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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